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ABSTRACT

This study examined effects of increased availability of undergraduate student loan funds under the Higher Education Act Amendments of 1992. It studied the effects of price variables and accumulated debt on student persistence decisions using data from the National Student Postsecondary Aid 1992-93 and 1995-96 Surveys. For two-year college students, increases in grants and loans significantly decreased the effect of tuition increases on student persistence. The effect of debt on two-year college students was significantly and negatively associated with persistence at low levels of debt and, unexpectedly, was significantly and positively associated with persistence for high levels of debt. For four-year students, all levels of debt were negatively associated with persistence. Implications for federal financial aid policy are drawn. These include: (1) students with limited incomes who choose income-contingent repayment plans should have a limit of 10 years for repayment; (2) graduates should be able to repay their student loans through flexible benefit plans; (3) the federal government should set different reimbursement rates for different types of institutions, with Pell Grants as the basis of federal financial aid; and (4) state grants should be the base of the students' aid packages. (Contains 58 references.) (DB)

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Deeper in Debt: The Impact of the 1992 Reauthorization on Student Persistence

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Dolores Vura
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Deeper in Debt: The Impact of the 1992 Reauthorization on Student Persistence[1]

Abstract

The Higher Education Amendment of 1992 increased dramatically the availability of student loan funds. This study examines the difference in effects of background, achievement and aspiration, college experience, price variables, and accumulated debt in 1993 as compared to 1996 on student persistence decisions using the National Student Postsecondary Aid Study. We find, generally, that current year subsidies are positively associated with persistence, but the opposite is true for accumulated debt. We provide suggestions on student loan reform.

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Deeper in Debt: The Impact of the 1992 Reauthorization on Student Persistence

Introduction

What is the influence of the increased availability of debt on the persistence decisions of college students? Does accumulated debt have an impact on persistence? Does the effect of accumulated debt differ between two- and four-year college students? These questions remain unanswered while the accumulated debt of college students inexorably increases. The primary focus of this study is to determine the effect of accumulated debt on the within-year persistence decisions of four-year and two-year college students. Specifically, it examines the difference in effects of background, achievement and aspiration, college experience, price variables, and accumulated debt in 1993 as compared to 1996 on the student persistence decisions, and provides suggestions on student loan reform.

Background

The original goal of federal student financial aid was to make college affordable and accessible to low-income students through a series of grants and assist lower middle-income students through the use of government subsidized loans. However, through a series of philosophically unrelated amendments, loans have replaced grants as the subsidy of choice for all students. The 1992 Reauthorization of the Higher Education Act cemented the shift in federal policy from a commitment to promote access through need-based grants to a broader strategy of loans regardless of family income or need. The relaxed eligibility for government subsidized loans resulted in an increase of two million additional students receiving loans between 1990 and 1996, with a concomitant 92 percent increase in money borrowed. Schershel (1998) reported that of the $239.2 billion borrowed since the inception of the federal loan programs in 1966, one-third of this amount, $79.1 billion, was borrowed in fiscal years 1994, 1995, and 1996.

Several key principles of federal student financial aid policy have evolved. Johnstone (1995) and McPherson, Shapiro, and Winston (1993) generally agree that these principles are: the costs of higher education are shared by the student, the student's parents, and the taxpayer; and the ability of the parents to pay for education should be objectively measured. In addition, the federal government believes that it makes grants available to low-income students so that they can afford moderately-priced public institutions, makes loans available to middle-and upper-income students so that they can afford higher-priced private institutions, and gives aid to students without regard to course of study or academic promise.

Literature Review

The research on student persistence was given a big boost by the National Postsecondary Student Aid Study (NPSAS) of 1987. Much of the research prior to NPSAS had been at the institutional level or using small, select national samples. NPSAS provided an opportunity to study persistence using a large, national sample with an extensive set of economic, demographic, and college experience variables.

A series of studies using NPSAS:87 and NPSAS: 90 were done by St. John and his associates (Andrieu, 1990, 1991; Andrieu & St. John, 1993; Hippensteel, St. John, & Starkey, 1996; St. John, 1992, 1993, 1994; St. John & Andrieu, 1995; St. John, Oescher, & Andrieu, 1992; St. John, Paulsen, & Starkey, 1996; St. John & Starkey, 1995a, 1995b; Starkey, 1993; Trammell, 1994). In turn, these studies drew on the theories developed in previous persistence research (Astin, 1971, 1975; Bean, 1980; Pascarella, 1980; Pascarella & Terenzini, 1977, 1979, 1980,1983; Spady, 1970, 1971; Tinto, 1975, 1982, 1990). Only the NPSAS studies will be reviewed here, briefly, since they were used as models for our study.

St. John, Paulsen, and Starkey (1996) examined the influence of finances on college choice and persistence decisions. Financial choices had direct and indirect influences on college persistence, and market-based, monetary measures of financial aid, tuition, housing costs, and other living costs had substantial direct effects on persistence. Another study (St. John, 1992) focused on persistence by traditional college students. Their persistence was influenced by the tuition amount and grants were positively associated with persistence in private colleges but negatively associated with persistence in public colleges.

Several studies (Andrieu, 1990, 1991; Andrieu & St. John, 1993; St. John & Andrieu, 1995) examined within-year persistence of graduate students. The conclusions were that tuition charges had a substantial negative effect on persistence and comprehensive aid packages (grants, loans, and assistantships together) were the most effective means of subsidizing costs. DeAngelis (1997) extended the work of Andrieu and St. John on graduate student persistence using NPSAS:93. She found that financial aid significantly and positively influenced within-year persistence of graduate and professional students. Further, students receiving aid packages including loans, grants, and assistantships were more likely to persist.

Hippensteel, et al. (1996) used NPSAS:87 to examine the persistence of adult students in two-year colleges. They found that tuition had a negative influence on within-year persistence. All of the aid combinations (any aid, grants, loans, and packages) had a negative influence on persistence. They concluded that available aid was not sufficient to promote persistence. St. John and Starkey (1995a) used NPSAS:87 to study the impact of tuition charges and financial aid awards on persistence of traditional-age students in two-year colleges. They concluded that there was a strong negative relationship between tuition charges and persistence. For each $100 of tuition differential, the probability that traditional-age college students persisted decreased by 1.4% (as compared to 0.5% for traditional students in four-year colleges).

Cofer and Somers (1997) found, using NPSAS:93, that accumulated debtload was negatively associated with within-year persistence of all four-year, undergraduate students. In addition, they concluded that the threshold method of representing debtload was more applicable to persistence studies using debt as a variable. Their analysis demonstrated that debt thresholds more accurately resembled the decision making process of students when making persistence decisions.

Conceptual Framework

The framework for this study comes from sociology and economics. Sociological theory (Alexander & Eckland, 1975; Blau & Duncan, 1967; Eckland & Alexander, 1980; Parsons, 1959; Sewell & Shah, 1967; Sewell & Hauser, 1975; Thomas, Alexander, & Eckland, 1979; Trent & Medskar, 1968; Wolfle, 1985) suggests that background, family, academic ability, and aspiration variables should be included in any research on attainment. From economic theory (Becker, 1964; Denison, 1964; McPherson, 1982; Rusbult, 1980; Schultz, 1960) comes the notion that students invest in their education. Student aid and demand studies (Corrazzini, Dugan, & Grabowski, 1963; Hoenack & Weiler, 1975; Hopkins, 1974; Stafford, Lindstedt, & Lynn, 1984; Tannen, 1978) indicate that students "purchase" more education when prices are lower and less when prices are higher. Subsidies, in the form of student financial aid, lower the net cost of attendance. The research cited in the literature review generally used models that integrated these theories, as represented by background, price, and college experience variables.

Method[1]

This section describes the sources of data, the sample for this study, the model specifications, and the statistical techniques used in the study. This study uses the National Postsecondary Student Aid Surveys of 1995-96 (NPSAS:96) and 1992-93 (NPSAS:93) to explore how debtload and other variables affect within-year persistence for two- and four-year undergraduate students, and how the effect of debtload has changed after the enactment of the Reauthorization of the Higher Education Act in 1992. Since the decision to persist is a dichotomous outcome (either a student persists or withdraws) the data from the samples drawn from the two surveys was analyzed using logistic regression.

Research Questions

The following research questions were addressed:

1) How do background, achievement, college experiences, price, and debtload influence within-year undergraduate persistence at two- and four-year colleges?

2) Has the influence of background, achievement, college experiences, and price on within-year undergraduate persistence at two- and four-year colleges changed between 1993 and 1996?

3) What is the effect of debtload on within-year undergraduate persistence at two- and four-year colleges?

4) Has the influence of debtload on within-year undergraduate persistence at two- and four-year colleges changed between 1993 and 1996?

Sample

The NPSAS:93 and NPSAS:96 restricted databases were used for this study. The databases were adjusted in several phases to arrive at the study sample. The first phase consisted of eliminating all graduate students. The second phase eliminated all records that indicated a "missing value" for the total amount borrowed variable. Finally, to adjust for the over sampling of seniors in NPSAS:93, a random sample of approximately 50 percent of the seniors left after the first two phases was taken to arrive at a more uniform distribution by class level.

Model Specifications

The model used in this study drew on the previous NPSAS research (cited earlier). The study focused exclusively on within-year progression of students from the fall to the spring semester. In addition to including the

variables consistent with prior studies, the amount of debt was added to the model as three separate thresholds of debt, consistent with prior research including debt in persistence models (Cofer & Somers, 1997, 1998; DeAngelis, 1997).

Variables were carefully selected from NPSAS:93 and NPSAS:96 for consistency of the models. The model was composed of five factors: background, aspirations and achievement, college experiences, current year price and subsidies, and debtload. The variables are listed here and are described thoroughly in technical supplement. The variables for the factor background were: ethnicity (3 variables), gender, age, income (less than $11,000, more than $60,000, and incomes in the middle range), marital status, mother's and father's educational level, and financial dependency (as defined for financial aid purposes). The four aspiration and achievement variables indicated degree level aspirations and SAT/ACT scores. The college experience variables were type of institution, grade point average, class standing, campus residence, hours worked, and attendance intensity. The current year price and subsidy variables were: tuition and fees, grants/scholarships, loans (current year), and work study. The debtload variables indicated accumulated debtload in three ranges: less than $3,000, $3,001 - $7,000, and over $7,000.

Statistical Method

While there is some debate over whether multiple regression can be used in instances where the outcome is dichotomous (Dey & Astin, 1993), we have chosen logistic regression. In a linear regression model, two assumptions are important. The first is that the variables are continuous. The second is that the relationship between an outcome variable and independent variables is expressed by a straight line. Both of these assumptions are violated when the outcome is dichotomous (Cabrera, 1994). Thus, while linear and logistic regression often produce similar results, theoretical constructs dictate that logistic regression is superior (this is described in detail in our technical supplement).

The beta coefficients are converted to delta-p's using a method recommended by Petersen (1984). The delta-p measures change in the dependent variable. For dichotomous variables, the delta-p provides a measure of the extent to which the outcome is likely to change if a student had the specified characteristic. For example, a delta-p of 0.050 for females is interpreted as increasing the probability of enrollment by 5.0 percentage points for

this group. With continuous variables, the delta-p is interpreted as meaning that a change in a unit measure will change the probability of the outcome by a certain percentage. For example, a delta-p statistic of .0450 per $1,000 of financial aid indicates that the probability of attendance or persistence increases by 4.5 percent per $1,000 of financial aid awarded. The delta-p is particularly useful in policy studies because of its ease in application.

Results

The effect of the independent variable on the dependent variable, within-year persistence, is shown in Tables 1 and 2 as delta-P. The following discussion will not directly refer to effect size of the non-financial independent variables since the information is available in the tables.

Two-Year Students

Non-financial Variables

In 1993, three non-financial variables were significant and negatively associated with persistence, and four non-financial variables were significant and positively associated with persistence. Low income students, those who worked full-time, and students with low GPA scores were less likely to persist than their respective counterparts. Younger and other race students were more likely to persist than older and white students. Student aspirations proved to be an excellent indication of student persistence behavior. Students who aspired to an advanced degree and those who aspired to a baccalaureate degree were more likely to persist than those who did not aspire to a college education.

The regression analysis of the 1996 sample (Table 1) found that ten non-financial variables were significantly related to within-year persistence of two-year college students. Students who attended private schools and students with low or no GPA scores were less likely to persist. Students over 30, dependent students, and students aspiring to an advanced degree and aspiring to a college degree, and sophomores were more likely to persist.

Financial Variables

In 1993, three of the four current year price and subsidy variables were significant, and associated with persistence. Students were 0.57 percent less likely to persist per $1,000 in tuition, 6.84 percent more likely to persist for every $1,000 in grants received, and 2.45 percent more likely to persist for every $1,000 of student loans

received in the current year. Only one of the three levels of debt were negatively associated with persistence received in the current year.

Table 1

Analysis of Within-Year Persistence for Two-Year Students

	NPSAS:96 Delta P	NPSAS:93 Delta P
Background		
Gender-Male	-0.0306	0.0014
Black	*-0.0438*	-0.0518
Hispanic	0.0037	-0.0007
Other	0.0147	*0.0734*
Under 22	-0.0022	0.0289
Over 30	**0.0578**	-0.0383
High (>$60,000)	0.0403	-0.0262
Low (<$11,000)	-0.0187	**-0.0794**
Dependent	**0.1026**	0.0357
Married	0.0120	-0.0332
Mother w/ College	-0.0341	0.0127
Father w/ College	0.0403	0.0012
Aspirations & Achievement		
Advanced Degree	**0.0925**	**0.1010**
College Degree	**0.0795**	**0.0745**
High Test Scores	0.0128	-0.0112
Low Test Scores	0.0222	-0.0252
College Experience		
Sophomore	**0.1777**	**0.1036**
Live on Campus	-0.0036	0.0195
Private School	**-0.1288**	-0.0289
Full Time Student	**0.2882**	-0.0289
High GPA	**0.1240**	0.0168
Low GPA	**0.0508**	**-0.1967**
Work Full Time	-0.0013	**-0.0773**
Price & Subsidies		
Tuition	**-0.000049010**	**-0.0057**
Grant Amount	**0.1309**	**0.0684**
Loan Amount	**0.0797**	**0.0245**
Work Study	**0.1811**	0.0064

table continues

Table 1 (continued)

Analysis of Within-Year Persistence for Two-Year Students

	NPSAS:96 Delta P	NPSAS:93 Delta P
Debt		
High Debt	**0.1638**	**-0.0834**
Medium Debt	-0.0125	-0.0468
Low Debt	**-0.0514**	-0.0236
Model Statistics		
Sample Size	7505	5006
Pseudo R^2	21.06	9.63
Chi^2	2002	533
Persisters Projected	72.06	19.63
Non-Persisters Projected	69.69	94.30
Overall Predicted	71.03	72.27

Significant at p<.01 *Significant at p< .05*

Students with a high debt level (greater than $7,000) were 8.34 percentage points less likely to persist than those students with no debt.

In 1996, all of the current year price and subsidy variables were significant, and associated with persistence. Students were 0.0049 percent less likely to persist per $1,000 in tuition. The current year subsidy variables were positively associated with persistence with two-year students 13.09 percent more likely to persist per $1,000 in grants received, 7.97 percent more likely to persist for every $1,000 of student loans, and 18.11 percent more likely to persist for every $1,000 of work-study funds. Two of the three levels of debt were associated with persistence. Students with a low debt level (less than $3000) were 5.14 percentage points less likely to persist than those with no debt. However, students with high debt (over $7,000) were 16.38 percentage points more likely to persist than those students without accumulated debt.

Four-Year College Students

Non-financial Variables

Of the background variables significant in the 1993 model (Table 2), income is significant at both the high (over $60,000) and low (under $10,000) levels when compared to middle (between $10,000 and $60,000) income

students, and in opposite directions. High-income students were more likely to persist, and low income students were less likely to persist. Younger students (less than 22 years of age), students who aspired to a bachelor's degree or an advanced degree, and students with high achievement scores were more likely to persist.

Table 2

Analysis of Within-Year Persistence for Four-Year Students

	NPSAS:96 Delta P	NPSAS:93 Delta P
Background		
Gender-Male	-0.0064	0.0028
Black	**-0.0311**	-0.0180
Hispanic	**-0.0365**	-0.0120
Other	0.0137	0.0079
Under 22	*0.0185*	**0.0359**
Over 30	-0.0068	-0.0002
High (>$60,000)	**0.0374**	**0.0352**
Low (<$11,000)	0.0014	**-0.0271**
Dependent	**0.0261**	-0.0179
Married	0.0093	-0.0173
Mother w/ College	0.0129	0.0070
Father w/ College	**0.0257**	0.0051
Aspirations & Achievement		
College Degree	**0.0205**	**0.0455**
Advanced Degree	**0.0511**	**0.0661**
High Test Scores	**0.0203**	**0.0329**
Low Test Scores	*0.0151*	0.0082
College Experience		
Sophomore	**0.0507**	0.0114
Junior	**0.0480**	**0.0375**
Senior	**0.0753**	**0.0837**
Live on Campus	**0.0221**	**0.0214**
Private School	**0.0250**	0.0036
Full Time Student	**0.0650**	**0.0528**
High GPA	**0.0332**	-0.0011
Low GPA	**-0.0237**	**-0.1244**
Doctoral	0.0109	0.0111
Work Full Time	**-0.0276**	**-0.0250**
Price & Subsidies		
Tuition	**-0.000009730**	**-0.0072**
Grant Amount	**0.0143**	**0.0118**

table continues

Table 2 (continued)

Analysis of Within-Year Persistence for Four-Year Students

	NPSAS:96 Delta P	NPSAS:93 Delta P
Loan Amount	**0.0129**	**0.0128**
Work-Study Amount	**0.0315**	**0.0224**
Debt		
High Debt	**-0.0536**	**-0.0314**
Medium Debt	**-0.0272**	**-0.0332**
Low Debt	**-0.0461**	**-0.0250**
Model Statistics		
Sample Size	15272	16952
Pseudo R^2	10.14	9.57
Chi^2	1722	1793
Persisters Projected	99.36	99.21
Non-Persisters Projected	6.44	6.59
Overall Predicted	88.60	87.93

Significant at p<.01 *Significant at p<.05*

Six of the college experience variables were significantly associated with persistence. Students who were juniors, who lived on campus, or were full-time student were more likely to persist. Two college experience variables were negatively associated with persistence: students with a GPA in the lower third of the grade distribution and students who worked full-time.

In the 1996 four-year logistic regression analysis, six background, two aspiration, nine college experience, and all seven price, subsidy, and debt variables were significant. Hispanic students and African American students were less likely to persist than white students. Younger students, high-income students, students whose fathers had a college degree, and dependent students were all more likely to persist. All four aspiration and achievement variables were significant and positively associated with persistence.

All college experience variables were significant and related to persistence with the exception of those students at a doctoral institution. Only two college experience variables were negatively associated with persistence: those students with low GPA scores and those students who worked full-time.

Financial Variables

In 1993, all of the current year price and subsidy variables were significant, and associated with persistence. Students were 0.72 percent less likely to persist per $1,000 in tuition, 1.18 percent more likely to persist for every $1,000 in grants received, and 1.28 percent more likely to persist for every $1,000 of student loans received in the current year. Students were 2.24 percent more likely to persist for every $1,000 of work-study awarded.

All levels of debt were negatively associated with persistence. Students with a low debt level (less than $3,000) were 2.5 percentage points less likely to persist than those with no debt. Students with medium debt (between $3,000 and $7,000) were 3.32 percentage points less likely to persist, and students with high debt (over $7,000) were 3.14 percentage points less likely to persist per $1,000 than those students without accumulated debt. The pseudo R^2 for the 1993 model was .0957. It correctly predicted 99.21 percent of the persisters and 6.59 percent of the non persisters, for an overall prediction rate of 87.93 percent.

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The effect size of tuition for four-year students in 1996 was so small that the numbers in Table 2 had to be increased to six decimal places to display a non-zero number. For every $1,000 increase in tuition, students were .000097 percent less likely to persist. The other subsidy variables had a positive impact on persistence. Four-year

students in 1996 were 1.43 and 1.29 percent more likely to persist for every $1,000 in current year grants and current year loans respectively, and 3.15 percent more likely to persist per $1,000 in work study funds. All of the debtload variables were significant and negatively related to persistence. Students with high levels of debt were 5.36 percentage points less likely to persist than those with no debt. Those students who had middle and low levels of debt were 2.72 and 4.61 percentage points less likely to persist than those low-income students with no accumulated debt.

The pseudo R^2 for the 1996 model indicated that 10.14 percent of the variance in the outcome was explained by the model. The model correctly predicted 99.36 percent of the persisters and 6.44 percent of the non-persisters.

Discussion

There appears to be little change with only a few minor exceptions discussed below, in either two- or four-year student demographic characteristic between 1993 and 1996. Differences in parental educational level, and student aspirations appear to be more a function of data problems than actual demographic shifts due to the large number of missing values for these variables. While the regression analysis for both groups shows some differences in significant variables among the background, aspiration, and college experience variables, we do not believe they represent any more than the normal changes in student populations from year-to-year.

Financial variables however present a different and complex picture. For two-year students, the increases in grants (24.3 percent) and loans (77.2 percent) more than kept pace with the modest 5.7 percent increase in average tuition. Additionally, the proportion of students has increased at each level of debt for two-year students.

Tuition, while still negatively associated with persistence in 1996, has a significantly smaller effect. Secondly, all of the subsidy variables are positively associated with persistence, with a substantially higher effect size in 1996 than 1993. We conclude that there is an interaction among these variables, and that the increased availability of financial aid in all forms mitigates the effect of net price on two-year college students in 1996.

The effect of debt on two-year college students presents an interesting picture. For 1996, debt is significant and negatively associated with persistence at the low level of debt, but significant and positively associated with persistence for high levels of debt. In addition, the effect of high levels of debt on persistence is

fairly high. In 1993, only high levels of debt are significant, and have a negative effect on persistence. St. John and Starkey (1995a) found a negative effect of subsidies on persistence, and concluded that there was not enough financial aid available to positively impact the persistence decision. We believe that these later findings confirm that theory in part. In 1993, pre-HEA of 1992 and the unsubsidized loan program, there may not have been enough loan funds available for two-year students. Since tuition was, and still is fairly low for two-year students, the need based formula limited the amount of aid available for these students. Even at high levels of unsubsidized debt, it was not enough to positively influence persistence. It appears that in 1996 the situation has changed. The unsubsidized loan program, and the increasing availability of loans, has helped the two-year students to persist.

We believe that the high and increasing dropout rate among two-year college students is attributable to their pattern of attendance. There is a possibility that two-year institutions are not the preferred entry point for higher education for entering students, and serve as a convenient way station for students to gather needed credit hours. This supposition could explain the positive high debt effects and the negative low debt effects. That is, students who are normally four-year students with higher levels of tuition and therefore debt, are dropping into two-year schools and then continuing back to the four-year campus. Students who have academic difficulty in two-year institutions are dropping out before they accumulate substantial levels of debt. Moreover, students concerned about cost and debtload may be leaving, only to return whey they have financial reserves.

The findings of this study confirm the earlier findings. Studies of four-year students (Cofer, 1998; Cofer & Somers, 1997, 1998) found a negative relationship between debtload and within-year persistence. Specifically, Cofer and Somers (1997) found that debtload had a significant and negative effect at all three levels of debt tested in the study, and Cofer and Somers (1998) found that private school students were more significantly affected by debt than public school students, and the effect of debt had increased between 1993 and 1996. Cofer (1998) found that lower income students were more significantly affected by debt, at all debt levels, than those students at other income levels, and that the effect of debt increased for all students between 1987 and 1996. These studies also found increasing positive effects of subsidies, increasing negative effects of debt, and decreasing negative effects of tuition on within-year persistence of four-year students. This study, similar to Cofer (1998), found an extremely small negative effect of tuition on persistence.

We conclude in this study, as did earlier studies of four-year students (Cofer & Somers, 1998) that, rather than being incremental, the effect of debt is felt suddenly as debt is incurred. That is, a student borrows, which varies depending on need and other factors, in a lump sum at the beginning of the semester. When the next semester rolls around, the student has to again make a decision to persist based, in part, on this new, higher level of debt. Students view threshold levels as intimidating, especially when they move from one perceived level to another. Further, in the short term, students are increasingly willing to borrow to attend college, and at an increasing rate. This short-term borrowing to finance tuition appears to have decreased the influence of rising tuition on persistence decisions. However, the long-term effect of short-term borrowing decreases the likelihood of continued enrollment. Finally, students have developed a greater reliance and willingness to borrow to attend college, but within limits.

For two-year students, the above conclusions are only partially applicable. Because of the very nature of two-year institutions, the amount of funds a student needs to borrow is smaller than that of four-year college students. Two-year college students do not have to face the "do I take out more loans this semester" decision as many semesters as a four-year student. Additionally, not only is the length of time to finish a program of study shorter, but tuition is substantially lower at the overwhelming majority of two-year institutions, therefore the investment decision is not as onerous as for four-year students. This leads us to conclude that two-year students motivated to persist, for whatever reason, are willing to assume larger amounts of debt to meet their goal. There is also evidence that the "whatever reason" may be to return to a four-year institution. For other students, the decision to assume more debt significantly contributes to the decision to withdraw.

Implications for Federal Financial Aid Policy

What does this study suggest about the effectiveness of federal financial aid policy? First, current year subsidies are generally positively associated with persistence. However, accumulated debtload is generally negatively associated with persistence. Second, aid policy is premised on the assumption that the cost of higher education will be shared by the students, parents, and the federal government. Escalating loans, however, have pushed the burden of paying for the loans onto students, forcing them to graduate into debt, postponing life plans and major purchases until the student loans can be repaid (Somers & Bateman, 1997; Somers & Cofer, 1997;

Somers, Cofer, DeAngelis, & Cook, 1997). Third, the robust economy has masked the hidden impact of higher levels of debt. Students can drop out for a semester or two, obtain a job, and then return to school when their resources permit. Part-time jobs for students off campus are plentiful. Moreover, the economy is providing steady employment for graduates who might in previous years have been unemployed. The real bind comes for graduates with high debt levels who go into low paying positions. For them, bankruptcy court was an option for discharging student loans if paying them would cause undue hardship on the graduate. However, with the 1998 changes in the bankruptcy laws, discharge of new or refinanced student loans is no longer possible. Fourth, many Gen-X students have a "charge it" mentality, having grown up in an era of prosperity where the bills were paid by mom and dad. For those students, the bubble will burst, perhaps not when they first begin paying their loans, but later. Sixth, poor students may view a college education as "the price of admission" to the middle class. However, the price they pay is high indeed. With few family resources, they must rely almost exclusively on grants, loans, and work. The psychological aspects of borrowing to attend college may be enough to discourage persistence.

As student borrowing escalates, college costs increase, and the federal government continues to dispense more student loans, where will this spiral end? Clearly, some students have already opted out of the carnival ride called student loans by leaving school. However, we believe that when the Economy slows down, the bubble will burst. Families will have difficulty providing support for students, graduates will be strapped to repay their student loans and will default on them, and the federal government will go into a default frenzy and Congress will modify the student loan program once again.

However, there are a number of steps that the federal government can take to prevent this situation (Somers & Cofer, 1998). First, students with limited incomes who choose income contingent repayment plan should have a limit of 10 years for repayment. Longer repayment periods increase dramatically the amount of repayment, providing the perverse disincentive of having those least able to pay actually paying more than the most affluent graduates. Second, graduates should be able to repay their student loans through flexible benefit plans. Third, the federal government should develop an educational HMO model (Cofer, 1998, Cofer & Somers, 1998; Gladieux, Hauptman, and Knapp, 1994). This option very simply includes setting reimbursement rates for different types of higher education institutions, and establishing Pell Grants as the basis of financial aid at the established four-year

rate. Fourth, to increase access and fully fund the grant program, state grants (like the Georgia Hope program) should be the base of the student's aid package, with Pell Grants, scholarships, and work study, and finally, loans. Having the Pell grants as the base of the financial aid package depletes federal resources, and having loans as anything but the final part of the package hurts poor students. Fifth, since all of these other programs tend to benefit middle-class students, the federal government should return to its primary mission: to provide access and choice for low-income students.

Conclusions and Implications

Earlier work previously cited by St. John, developed the "Emergent View" of the effect of financial aid on persistence, that is, there was not enough financial aid to have a positive impact on effect. We believe that there is now more financial aid available, however it is mainly in the form of student loans. While current year subsidies have a positive influence on persistence in this study, the effect of accumulated debtload is the opposite. So, with increased aid comes decreased persistence. As Eaton (1995) says, "How perverse that we can ensure access to collegiate education for students who are already less affluent only through a public policy that forces them into indebtedness (p. 12)." Students, it would seem, agree with this statement.

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Endnotes

1. Because of the complex nature of the two studies, we have a technical supplement which is available from the authors which explains in detail the sample derivation, variable coding, statistical procedures, and other methodological considerations.